



# Fuel Facts

## National Biodiesel Board

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## Easier on Marine Environment

Biodiesel is an obvious candidate for use in marine applications. Independent tests have found that pure biodiesel is non-toxic, readily biodegradable and essentially free of sulfur and aromatics. The marine industry accounts for roughly 10 percent of the petroleum diesel fuel consumption market in the United States.

- **Biodiesel will not harm fish.** The 96-hr. LC50 (lethal concentration) for Bluegills for C<sub>16-18</sub> methyl esters was greater than 1,000 mg/L. Concentrations above 1,000 mg/L are deemed "insignificant" according to National Institute for Occupational Safety and Health (NIOSH) Guidelines in its Registry of the Toxic Effects of Chemical Substances.
- **Biodiesel is easier on humans, too.** Vessel operators report a noticeable change in exhaust odor. The reduction in smell and change of odor are more palatable with engine workers. In fact, it's been compared to the smell of french fries. Biodiesel users also report having no eye irritation.
- **Biodiesel is biodegradable.** C<sub>16-18</sub> methyl esters are considered readily biodegradable based on their chemical nature and test data collected for experimentally determined oxygen demand and carbon dioxide production as a percent of calculated theoretical values. C<sub>16-18</sub> methyl esters do not show any microbiological inhibition up to 10,000 mg/L.

In tests performed by the University of Idaho, biodiesel in an aqueous solution after 28 days was 95 percent degraded. Diesel fuel was only 40 percent degraded. In a second study done in an aquatic environment (CO<sub>2</sub> Evolution), various biodiesel products were 85.5-88.5 percent degraded in 28 days, which is the same rate as sugar (dextrose). Diesel degradation was 26.24 percent.

- **Biodiesel offers more environmental benefits.** For research vessels and consumers using commercial vessels, biodiesel offers a more environmentally friendly alternative to regular diesel. Because it is nontoxic and biodegradable, consumers and researchers may pressure owners for biodiesel use, especially in sensitive or protected waterway areas.
- **Biodiesel is a renewable, domestic fuel.** Biodiesel is made from renewable fats and oils, such as vegetable oils, through a simple refining process. The by-product glycerin is used in commercial applications from toothpaste to cough syrup. One of the principal commodities used as a source for biodiesel is soybeans, a major crop produced by almost 400,000 farmers in 29 states.
- **Biodiesel helps speed diesel degradation when used in blends with petroleum diesel fuel.** Biodiesel degrades about four times faster than petroleum diesel fuel. Also, when blended with biodiesel, the degradation rate of petroleum diesel tripled when compared to diesel alone, according to a 1995 University of Idaho test.

